Ryan Chouest daily data transmission and report

Period covered: 1034 07/17/2010- 0934 07/18/2010

98.510- Nautical miles covered

Vessel science party:

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Cruise notes:

We sailed the route and collected vertical fluorometer casts shown in Figure 1. We received permission from SIMOPS to enter the 5 NM distance to the incident site. However, we actually entered into a 5 statute mile distance instead of a 5 nautical mile radius. Data were collected for two loops before being directed to a 7.5NM distance to allow the Seismic Vessel Geco Topaz to pass through. After receiving permission to reenter the area, we resumed our clockwise course at a 5NM distance.

Science results and preliminary interpretation:

Fluorometry results

The Chelsea fluorometer shows low levels of inferred hydrocarbon concentrations for the entire course traversed (Figure 2). However, the Trios and Contros sensors show higher readings throughout most of the route. The Trios sensor shows baseline to lower medium-level values but with a small region of medium values on the western portion of the inner loop (Figure 3). The Contros fluorometer data show low to medium values, with the exception of lower high-level values on the western side of the inner loop (Figure 4). The Trios and Contros sensors show very similar responses.

Surface observations

Surface sheens were observed throughout the surveyed route (Photographs 1-2). A contrast in the color of the seawater was noted at Cast station #7. Water at that location appeared to be browner and greener than the usual deep blue color. In addition, Greenish colored water was observed as we were sailing away from Cast #7 and may be a result of algal blooms in the upper photic zone (Photograph 3).

Vertical casts fluorometry results

A total of four vertical casts were performed during the last 24hrs in the vicinity of the well site. All 4 stations lie within the oil extent coverage. Fluorometry results of the casts are shown in figure 5A-5D. The missing sensor value at the surface in cast#7 and cast#8 is because Ryan Chouest was asked to move to minimum distance of 7.5nm away from the well site and the interruption caused by the vessel movement during the vertical cast, the remainder of the 5m and surface sampling had to be abandoned in both cases. The vertical profile of cast #5 (figure 5A) shows much higher poly aromatic hydrocarbon concentration at the surface compared to that of cast #6 (figure 5B). This concentration difference might be due to the gradual migration of the oil slick extent towards the north west of the well site according to ERMA's 07/16 and 07/17 composite maps. All four vertical profiles show elevated readings close to sea surface and close to baseline responses below ~20m along the water columns. The missing conductivity and temperature values at certain depths in figure 5B and 5C are due to the problem with the internal logger of the CTD unit.

Science Operations:

Fluorometer measurements were logged and observations of sea-surface conditions were made throughout the majority of the period. Vertical fluorometry casts and water samples were taken approximately every 45 degrees along the circular path. We continue to perform liquid-liquid extractions on seawater samples and analyze the extracted material by GCMS. We are also continuing to collect midwater and deep echosounder contacts.

Planned versus actual route taken cruise 8:

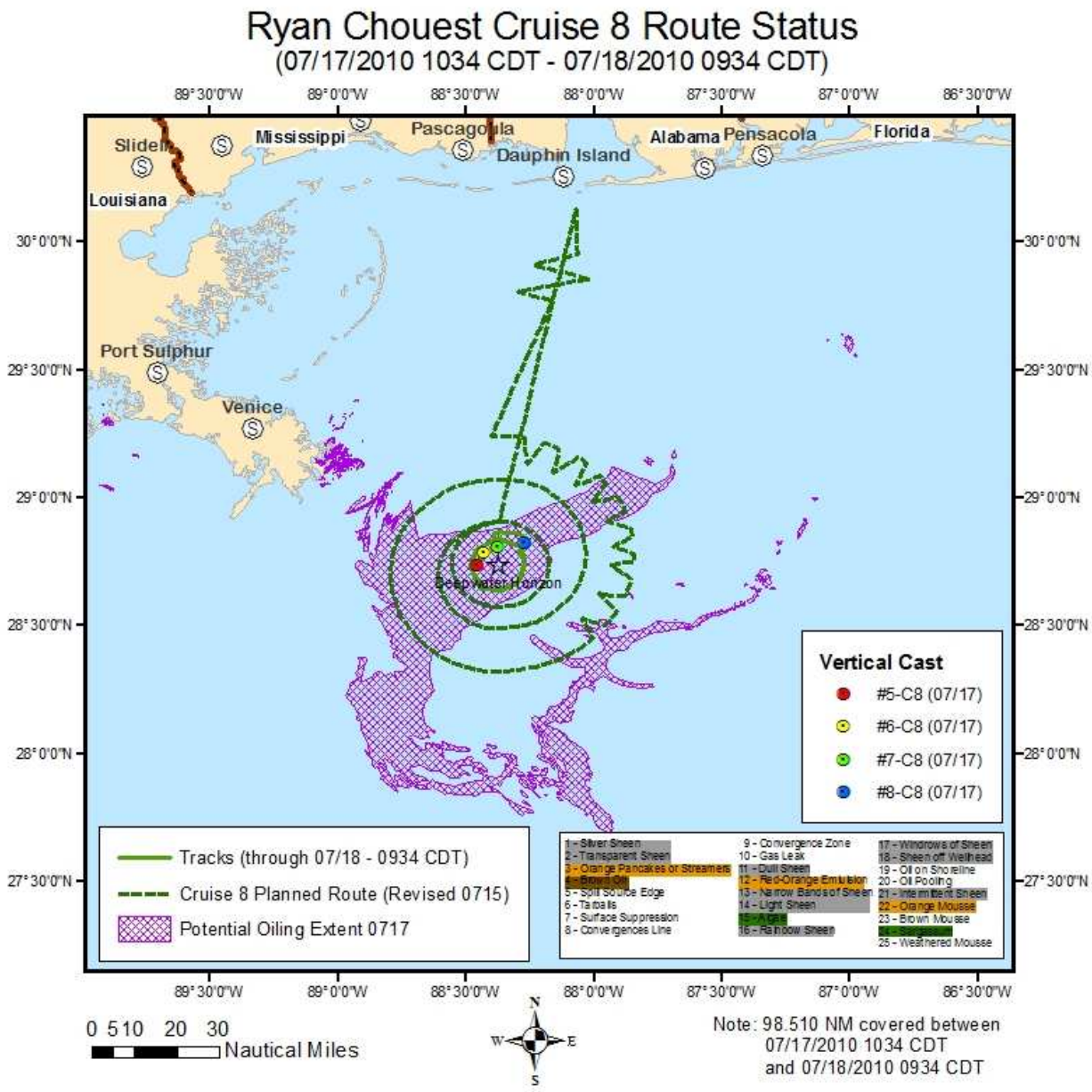


Figure 1: Planned versus actual route course plotted between 1034 07/17 – 0934 07/18. Purple shaded area represents outline extent of the slick from 07/17 ERMA composite.

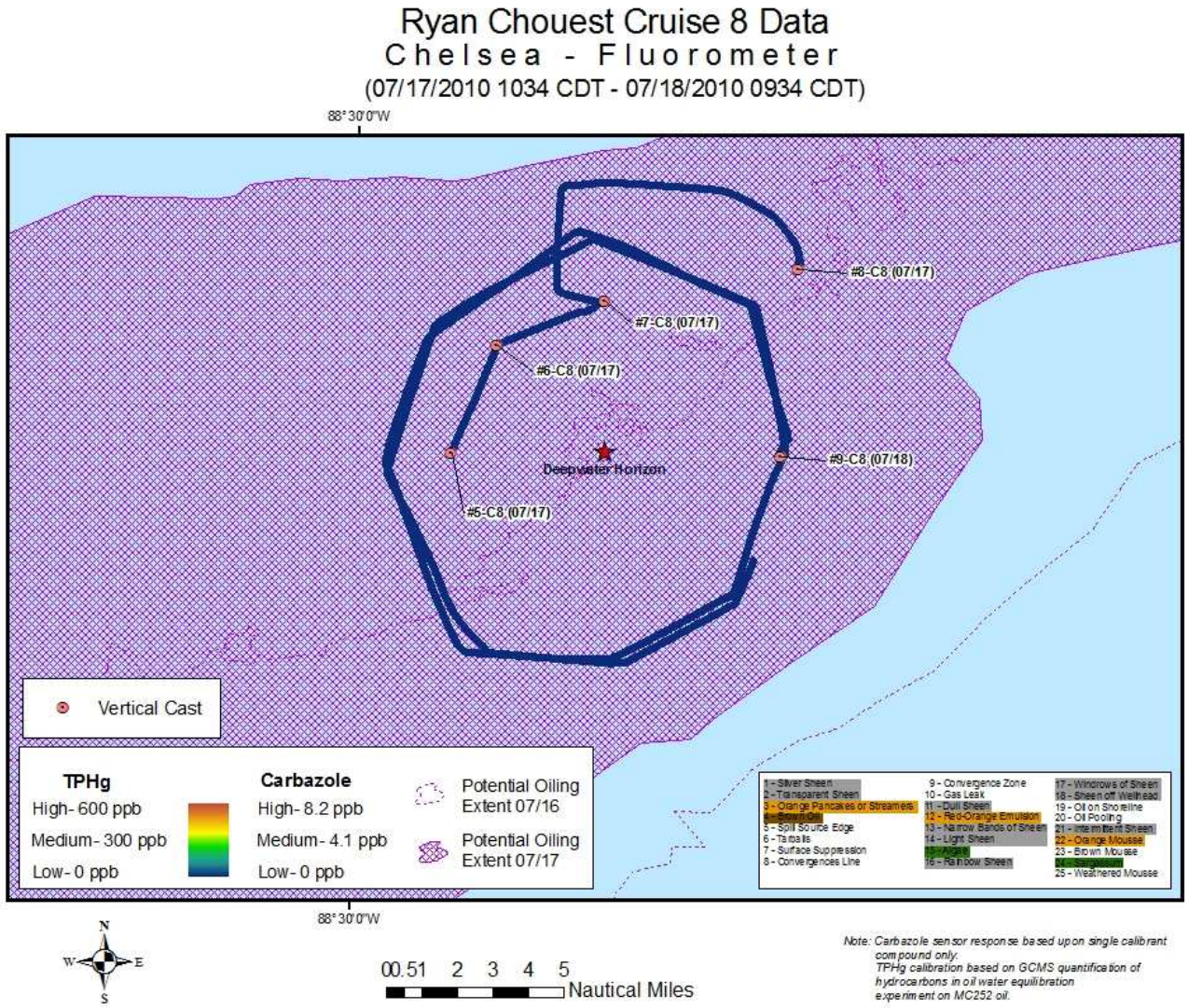


Figure 2. Chelsea fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

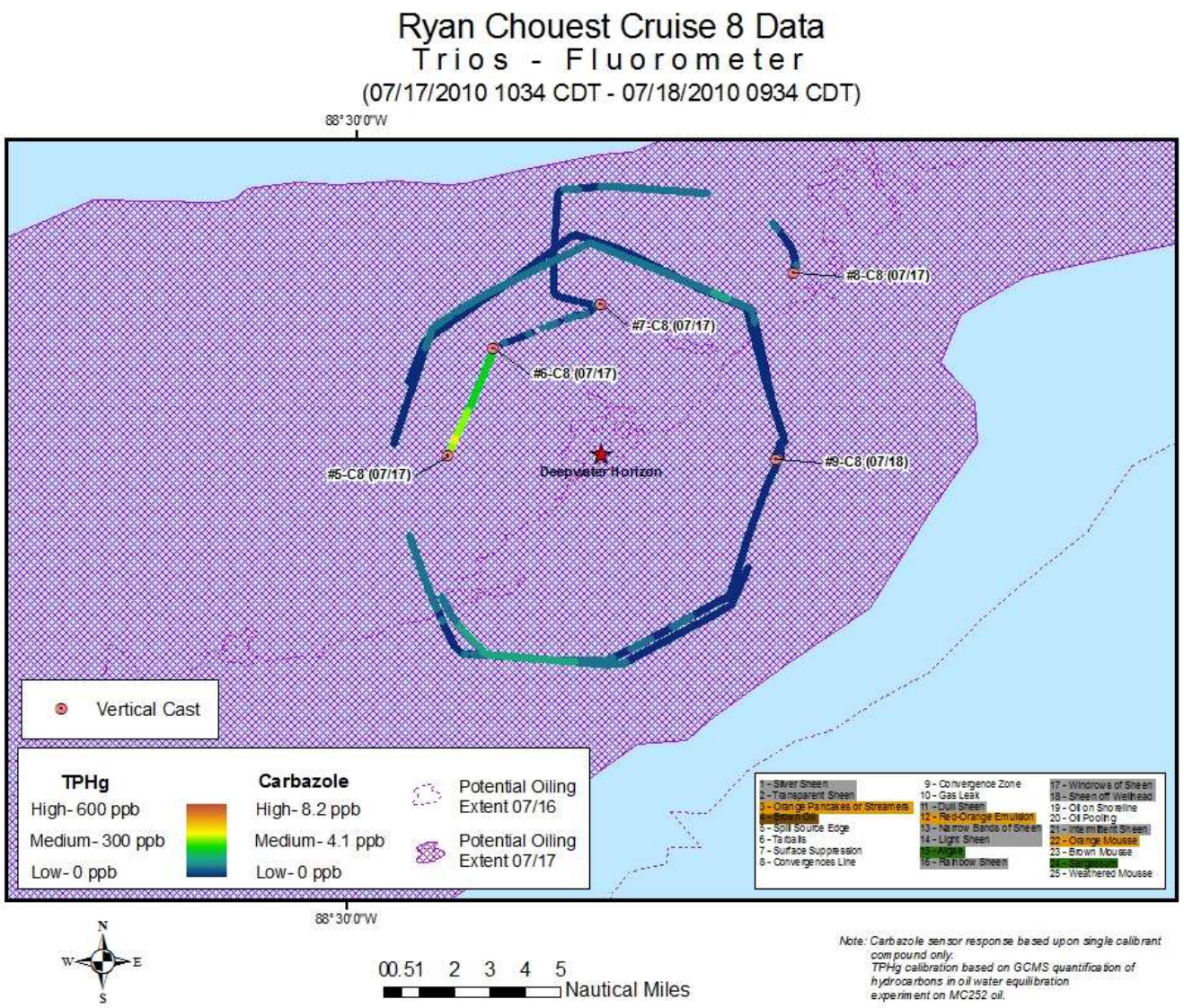


Figure 3. Trios fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

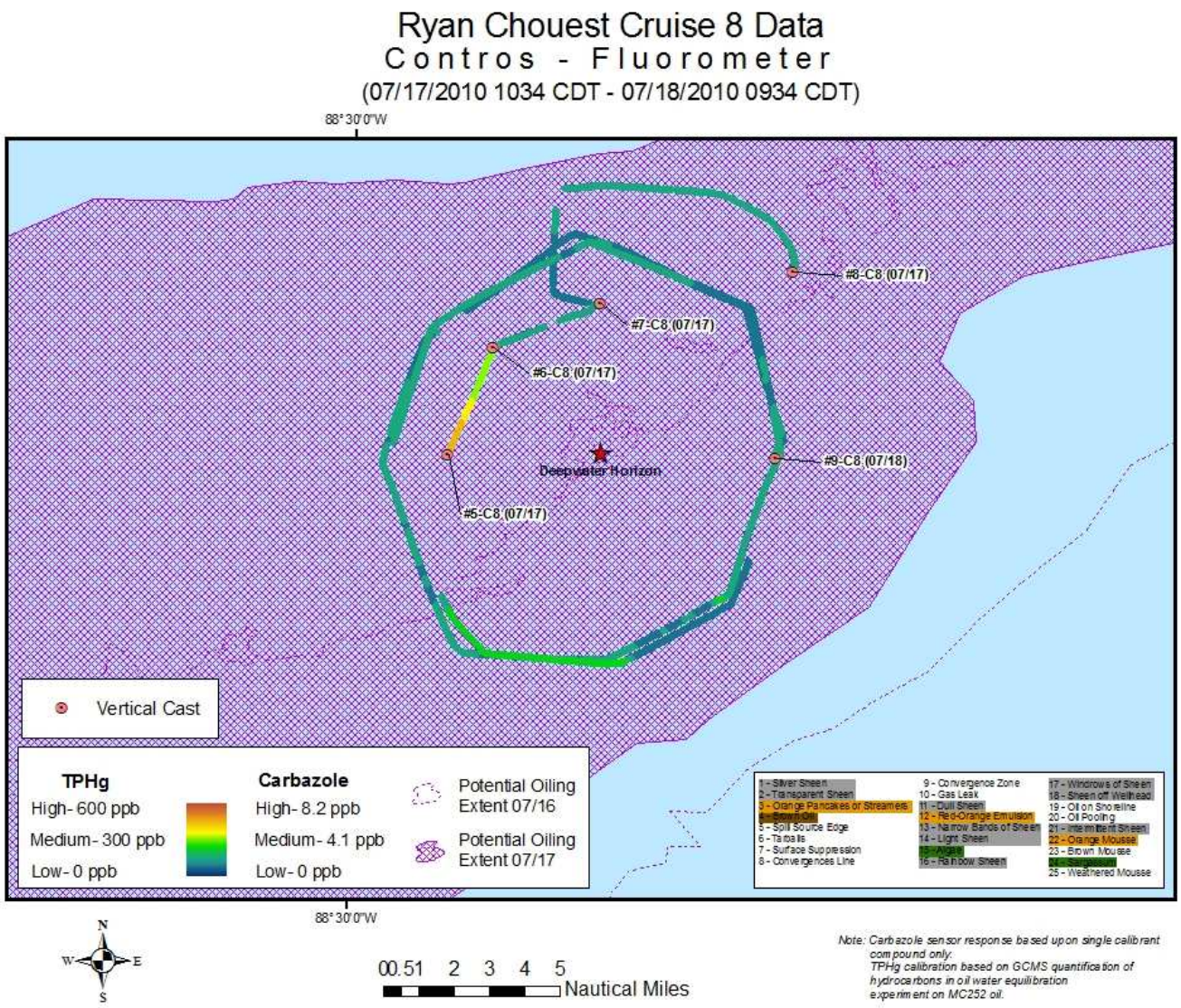


Figure 4. Contros fluorometer results plotted with location on cruise track 8. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

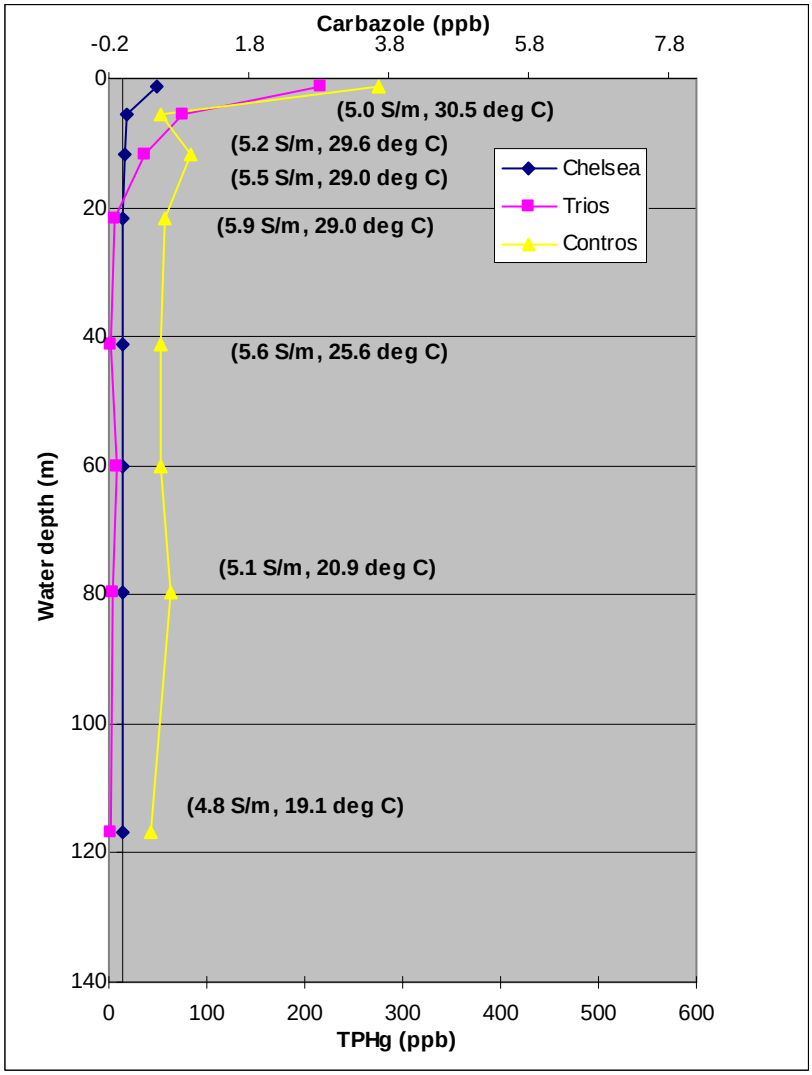


Figure 5A Fluorometer response vs. water depth for vertical cast # 5 / Cruise 8 conducted on 2010/07/17 at N 28 44.2007, W 088 26.8844. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

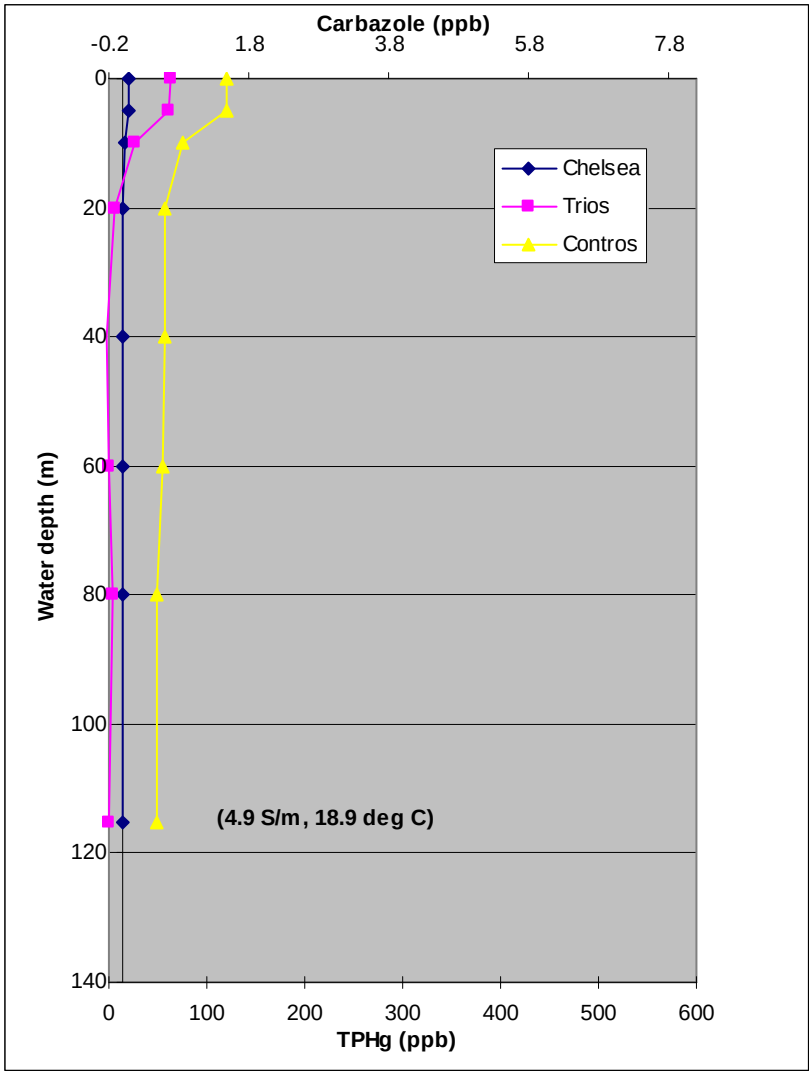


Figure 5B Fluorometer response vs. water depth for vertical cast # 6 / Cruise 8 conducted on 2010/07/17 at N 28 47.2667, W 088 25.4587. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

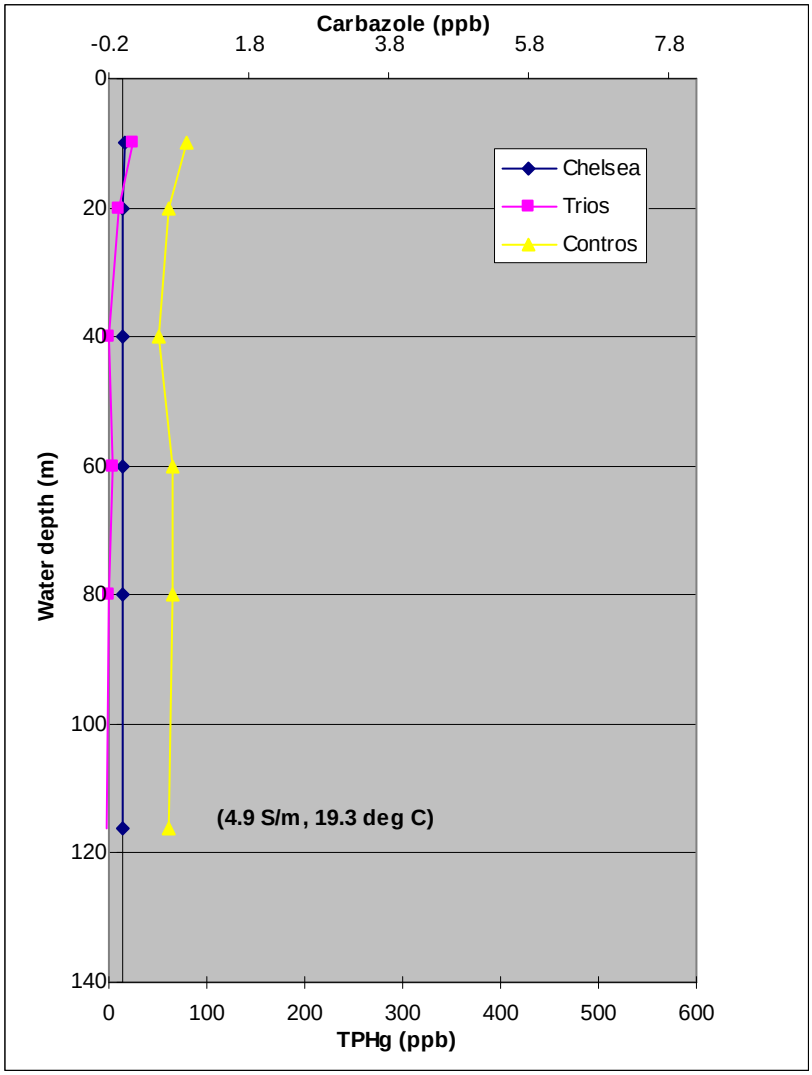


Figure 5C Fluorometer response vs. water depth for vertical cast # 7 / Cruise 8 conducted on 2010/07/17 N 28 48.5405, W 088 22.0167. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

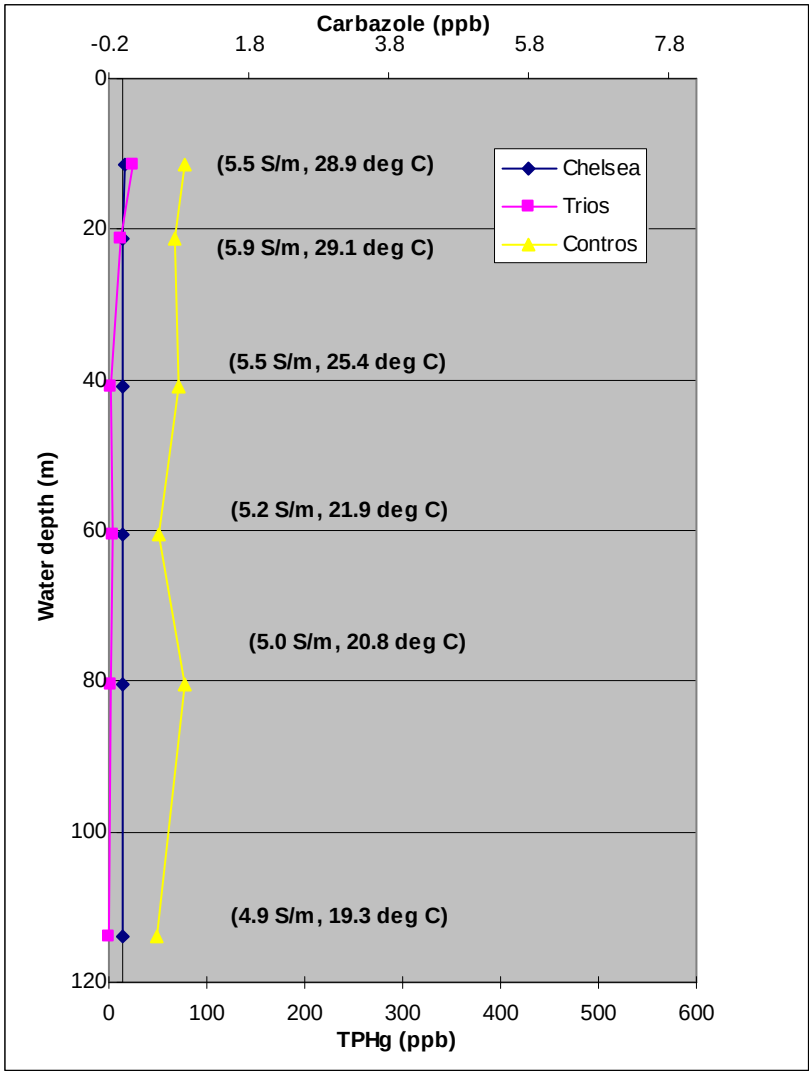


Figure 5D Fluorometer response vs. water depth for vertical cast # 8 / Cruise 8 conducted on 2010/07/18 at N 28 49.5013, W 088 15.800. (Conductivity and temperature values at each sampling depth, as indicated in the graph, are from the CTD unit attached to the vertical cast pump.)

Problems/operational issues:

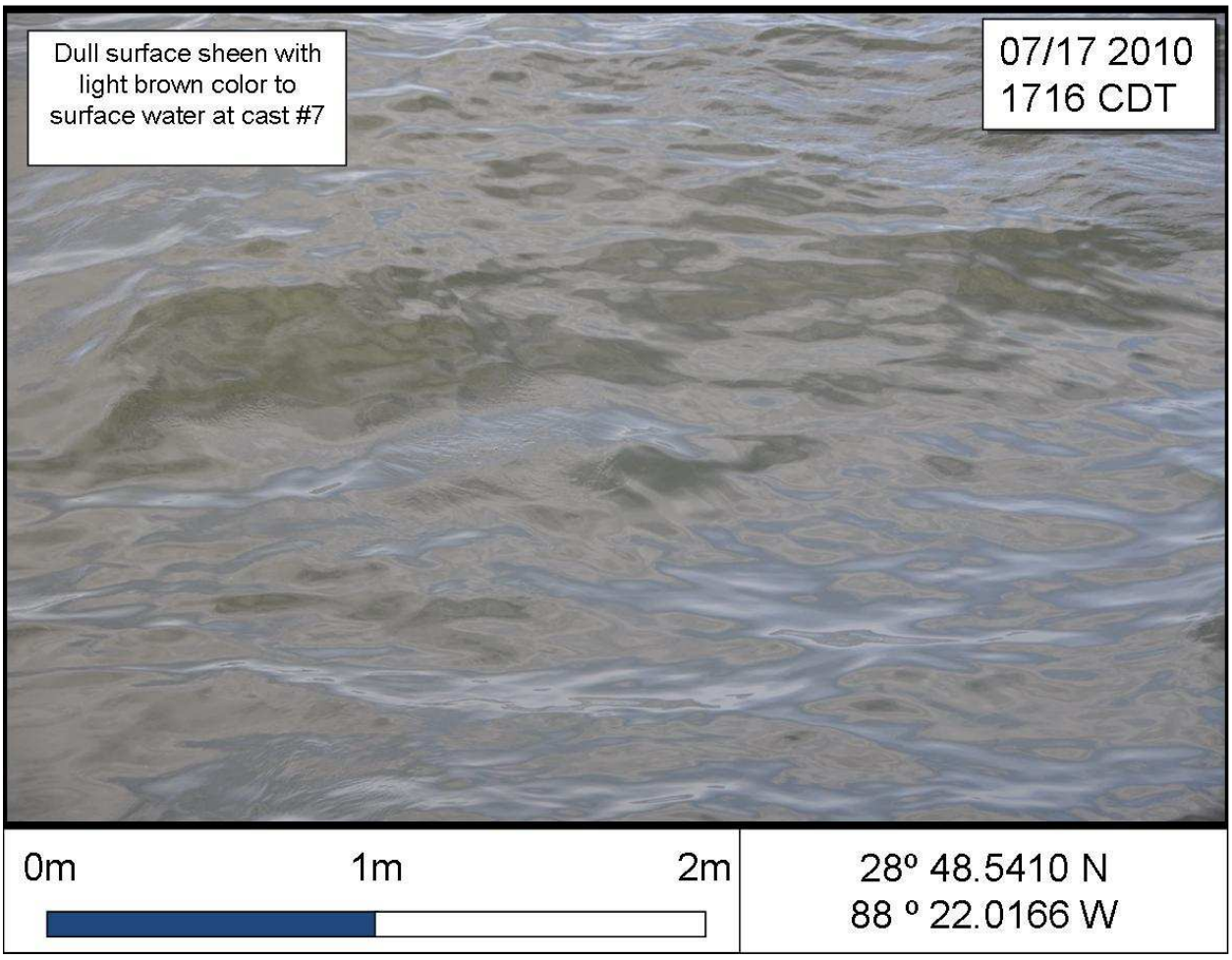
(Includes items up to report submission time)

The C&C generator remains inoperable.

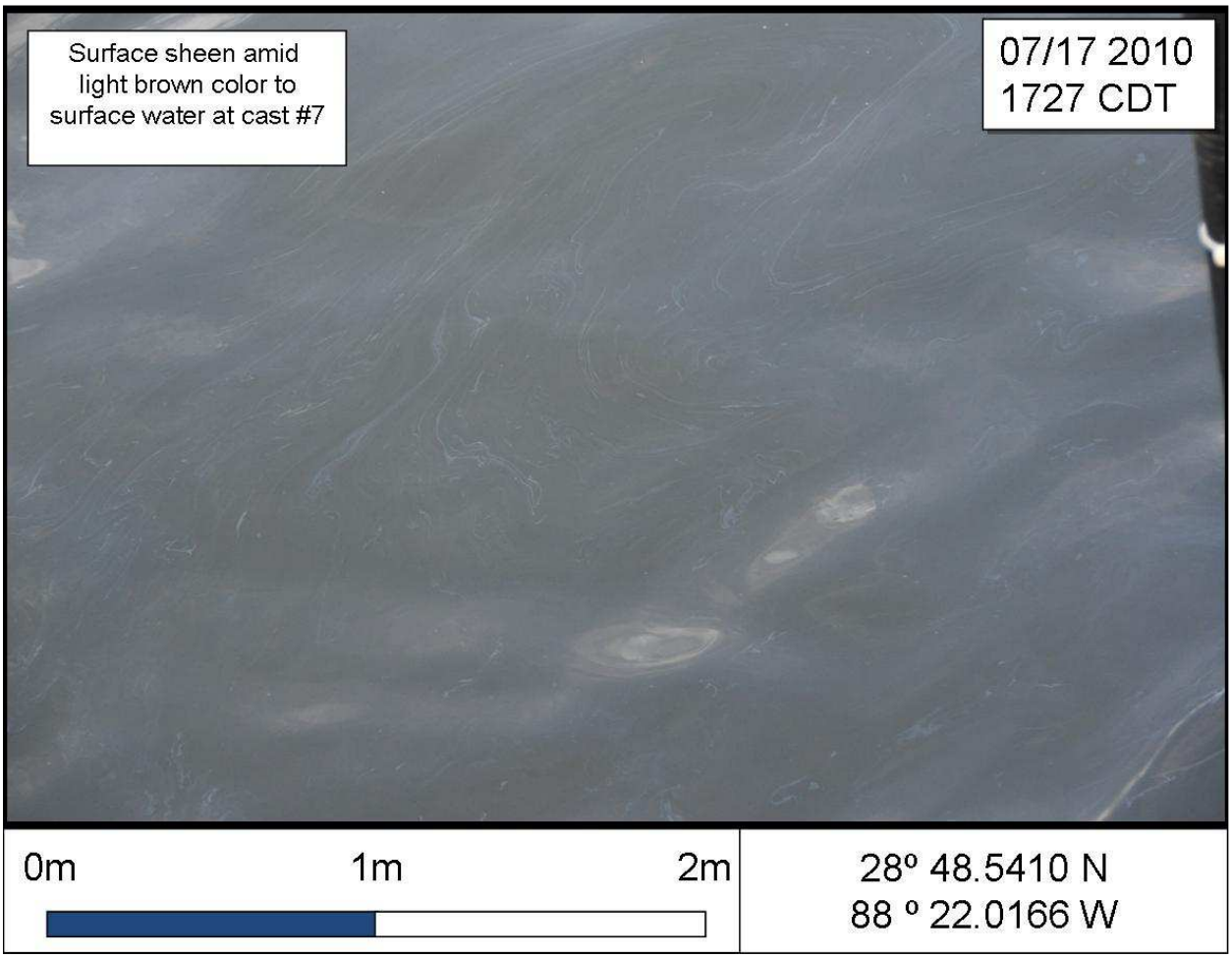
Planned activities for next 24 hours:

We are returning to the 5 statute mile and 5 nautical mile loops around the incident site to determine how the surface concentrations have changed over the past two days.

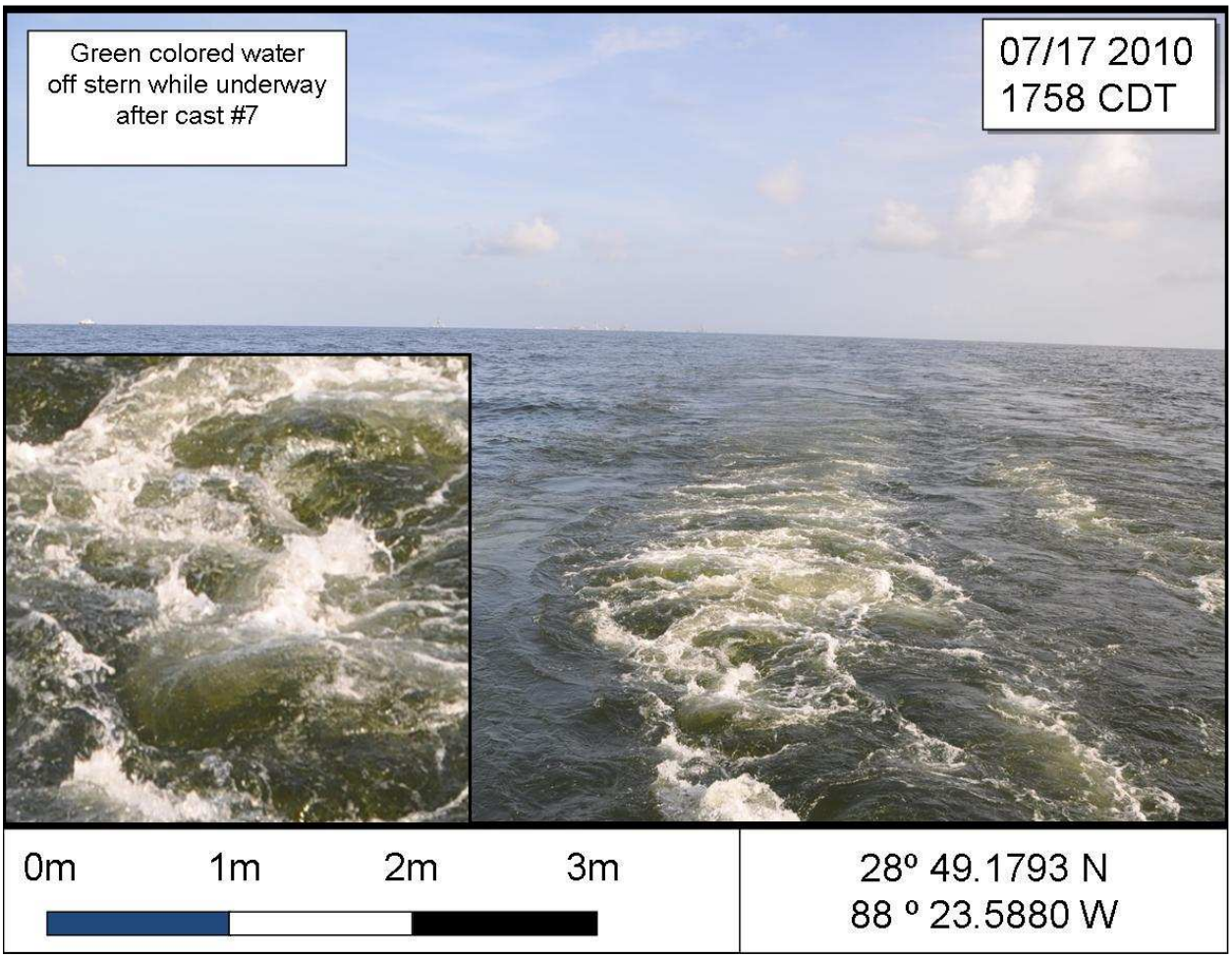
Selected Photos:



Photograph 1 Dull surface sheen in a brown colored water located at cast #7.



Photograph 2. Surface sheen in a brown colored water located at cast #7.



Photograph 3. Greenish colored water observed off the stern while underway after taking cast #7. The color may be due to a combination of green, golden-brown (diatoms), and/or yellow-green algal blooms in the upper photic zone.